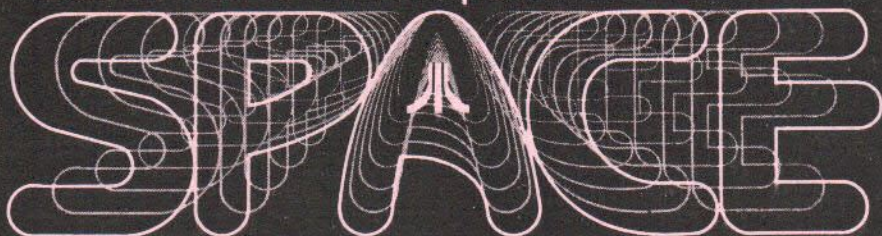


Saint Paul ATARI Computer Enthusiasts



An independent computer user group

SPACE Meeting Friday, Jan 13th at 7:30pm

MAST Meeting Friday, Jan 20th at 7:30pm

At the Falcon Heights Community Center
2077 Larpenteur Avenue West

MAST+ Programmers Meeting
Tuesday, Jan 24th at 7:30pm

At First Minnesota Bank Building - second floor
Lexington and Larpenteur, in back of building



Minnesota
Atari ST

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Sysop: Bruce Haug (Home Phone: 774-6226)

SPACE/MAST West (ST) - BBS Phone: (612)-560-9254

Sysop: Steve Pauley (Home Phone: 560-2917)



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Club members classified - 50¢ per 40 characters, \$2.50 minimum per ad.

Send to : SPACE/MAST, P.O. Box 12016, New Brighton, MN 55112



S • P • A • C • E

**BYTES from the PRES**

by Greg Howell

I would like to THANK Larry Vanden Plas for filling in for me at the December meeting, and to THANK all the other officers, and members of SPACE & MAST who helped to make 1988 a very good year for SPACE/MAST !!!!!

Seeing that our next meeting day is Friday the 13th, Joe Danko (our disk librarian) has been trying to find something really horrible for our January disk of the month. But (sadly) he has been having a little trouble, so if you have something really horrible (i.e. a picture of Freddy, or Chucky) bring it with you to the meeting. Not to mention I will be doing my horrible best to make this a meeting to remember (if you survive the night that is)!

I have been hearing a few members say "LET'S HAVE A SWAP MEET!!!!". so I will take a quick survey at the meeting to see if we have enough members interested. please feel free to give me a call (if you can't make it to the meeting or even if you can (my phone/door is always open)) and let me know (yea or nay) what you think. We will also discuss a date for the swap meet (like the

February meeting).

Also, either Larry or I will bring in an ATARI 1020 printer for a quick demo. This Small, INEXPENSIVE, plotter/printer has many applications and or uses. and (in my opinion) is well worth the small price tag!

OOPS!

Due to some communications problems, my column for last month will be printed immediately after this one.

Well, I think that about raps it up for this month's article, HOPE to see you all at the meeting!

BYTES from the SPACE PRES
[December 1988]
by Greg Howell

Since this is my first article as president, I think it would be best if I told you a little about my experience with Atari. I bought my first Atari 800 computer way back in 1979. It had 8K of memory, and cost a whopping \$899.95 plus tax. Soon after I heard from the Atari representative that they had recently formed a users group called the Twin-city Atari Interest Group (TAIG).

I was with TAIG on and off for several years. I was Sysop for

their BBS for about 1 year. However, it was very hard for me to attend meetings because they were a very long drive for me. A while after that I discovered SPACE. It was quite a lot closer, and people there seemed more motivated. Since then I have stayed with SPACE (less the years I was in the Army). I now mainly use my 130XE, but I still have my 800 sitting on my desk and still use it from time to time.

Enough of that, let's talk about the present (and future). The December meeting should be very interesting. Joe Danko (our disk librarian) has promised to give a demonstration of 'Diamond' and 'Geo' desk top software. As you know the December meeting will be our Christmas meeting and all you members are encouraged to BRING in your favorite Christmas software to demo (trade or swap) it to the rest of the group. I am also quite sure Joe Danko has a real treat for us, with the December disk of the month!

As for next month, January 13 (Friday, that is) will be horror month (boo hoo ha ha ha ha!)! I am hoping that all you artists out there can put together some really 'horrible' pictures and show them in January.

I would also like to start out the new year by trying to make the Atari owning public aware that there is support out there for them. I am very pleased with the suggestions I have heard so far, and

would love to hear more!

And now a word (or two) about the BBS. It has come to my attention that there are a lot of SPACE members out there that actually don't use our BBS. I find this rather disheartening. I would like to encourage the membership to take advantage of BBS. It is a nice way to meet new people, get your questions answered, and keep up on SPACE/MAST news.

Well, that is all I have this month. I hope to see you all at our December meeting!



About Last Night... by David Cole

This month has been quite exiting in both good and unfortunately, bad ways. The good part is that we now have two more stores to find Atari software, Computer Station and Electronics Boutique. From experience, Electronics Boutique is a nice store. Although I haven't seen the store yet, from what I've heard, Computer Station seems to be a good store.

The bad news is that the Twin cities Atari Interest Group (TAIG) folded up. It was sad to see a fine user group fold up. I hope that the same doesn't happen to SPACE. What was the fault that made TAIG fold up? Bankruptcy? Lack of support and interest? Or a combination of the two?

It seems most likely that it was a combination of the two that made the group fold away. Let us hope that the same never happens to SPACE. With continuous support, we can make sure that SPACE won't fold for many years to come.



Minutes of the SPACE Meeting by Larry Vanden Plas

1. The meeting was called order December 9, 1988 at 7:30 by Secretary Larry Vanden Plas, filling in for President Greg Howell, who was ill.

2. Due to the change over of officers last month the secretary's report did not get published in the newsletter. The main business was the election of officers which did get reported in the newsletter and the final approval of the by-law changes as previously published in the newsletter.

3. Treasurer's report: We are up \$20 from last month.

4. Offers & Deals:

Electronic Boutique at the Maplewood Mall has a number of very good games for reasonable prices.

PEC Data in St. Paul is now repairing Atari equipment.
DataQue Software is

offering a beta test package for their Turbo-816-XB adapter board for \$69.95. This should offer results similar to the Apple GS. They are looking for Beta Testers. This is for XL/XE units only.

It was reported that the hours for Computer Station on Diamond Lake Road and Nicolet Ave. in South Minneapolis are 10 to 6, 10 to 5 on Saturday and 12 to 3 on Sunday.

5. Chuck Grimsby, the president of the Twin Cities Atari Interest Group (TAIG), reported that TAIG is folding. He said the last equipment will be auctioned off on December 18th, at 7PM. Although there is not a single reason, the main reasons were money and the lack of volunteers.

6. Problems: A problem with Awardware and the Atari XDM801 was reported. If anyone is familiar with this combination, please mention potential problems and how to solve them at the next meeting.

7. Carl Towberman volunteered to help Joe Danko as Disk Librarian.

8. Joe Danko reported on a 64Kbank select cartridge that will accept other cartridges. More next month.


9. The latest Z-may is almost all 8-bit. We will try to get them on the BBS. They are about 5000

bits per week. Joe will try to offer 4 to 5 on a disk.

The February Antic is all 8-bit. There is increased interest in a graphic operating environment as seen in a recent conference.

10. The meeting ended with a demonstration of programs on the Disk of the Month (DOM).

SPACE DOM News

 January 1989
by Joe Danko, SPACE
Disk Librarian

I would like to start off the year with an apology to all who purchased the TERM80/READ80 disk at the December meeting. There is a FONT file missing for READ80. I will cheerfully exchange for a complete disk at the January meeting.

Here are the new disks offered to SPACE members for January:

Disk Of the Month:
SIDE A:

DOS SYS 037
DUP COM 042
AUTORUN SYS 001
LOAD 033
MENU 037
BONMENU COM 002
BOFFMENU COM 007
BASICON COM 001
BASICOFF COM 001

FROGJUMPBAS 009
SHORTLIFBAS 016
DDENSITYBAS 009
BOMBY COM 008
BGM COM 161
BGM TXT 006
BLAST COM 033
TRACER COM 064
TROLL COM 023
KARATE ARS 002
KARATE 089
MOON 031
MAIN PIC 056
DUP SYS 007
HELP DOC

AUTORUN.SYS

As soon as the boot completes this forces a BASIC 'RUN"D:LOAD'.

LOAD

This BASIC program consists mainly of a SPACE title screen followed by the prompt to PRESS START. START causes the BASIC program MENU to RUN. You could use the combination of this AUTORUN.SYS and LOAD to automatically RUN any BASIC program just by writing a one line BASIC program '10 RUN"D:MYPROG.BAS', for example, and name it 'LOAD'.

MENU

Here is the all new loader/menu program I have been developing for the last several months. It has most DOS functions and can be loaded without the SPACE title screen. It automatically loads any type of file,

BASIC SAVE/ENTER or binary(XL,XE) and will display files with DOC or TXT extensions on the screen or printer. The binary loader has been improved to correctly turn off BASIC, raise RAMTOP and reset the display list. It should not disturb XL/XE RAMDISK handlers where the old program did not take them into consideration when it turned off BASIC. If you want to get back into this menu after a binary file has loaded a RESET should cause the *.COM menu(DUP.SYS) to load and then just select BON-MENU. Be aware that some binary file programs won't allow RESET recovery and a cold reboot may be necessary. Yes, I know, the directory reads a little slowly but that is the price we pay to be user-friendly.

BONMENU.COM

This binary load program was formed by appending the AUTORUN.SYS on this disk to BASICON.COM also on this disk. What it does is turn on BASIC (XL,XE), lower RAMTOP, reset the display list and then force BASIC to RUN"D:MENUE. It's useful if you have had BASIC off and now want to turn it back on and run the menu/loader on this disk.

BOFFMENU.COM

This binary load program was formed by appending a short binary load menu program to BASICOFF.COM. It will turn BASIC off(XL,XE), raise RAMTOP, reset the display list and load the *.COM

menu program. It's useful if you want to turn off basic and load binary files automatically from BASIC. The binary loader will only work with DOS 2.0/2.5.

BASICON.COM

If you have an XL or XE you can load this from the DUP.SYS menu to turn on BASIC.

BASICOFF.COM

If you have an XL or XE you can load this from the DUP.SYS menu to turn off BASIC.

DUP.COM

This is actually DOS2.5 DUP.SYS renamed so that it will show up on the *.COM binary loader menu.

DUP.SYS

This is a copy of BOFFMENU.COM renamed. What this does is dump you into the *.COM binary loader menu if you hit RESET(most of the time) or if you are booting your ATARI 400/800 with no BASIC cartridge installed.

FROGJUMP.BAS

First of three winning entries sent in to the ATARI EXPLORER 1K-byte programming contest. A two player joystick program where the only control is the fire button on each stick to make the frogs jump the farthest.

SHORTLIF.BAS

Second of the 1K-byte programs, this one is a derivative of the LIFE simulation/game we have all seen. Life is a simulation of generational growth/extinction where coordinate points obey strict rules concerning life and death to create a psuedo-random pattern of existence. 1-a lone dot dies. 2-two adjacent dots cause the birth of a third. 3-three adjacent dots cause the death of all three. This one sets up a random pattern with BASIC statements and then calls a machine-language algorithim to run through 64 generations.

BOMBY.COM

The third 1K-byte contest winner is a hyperactive arcade shoot-em-up that is far to fast for my reflexes. Maybe someone coild disassemble it and slow it down a bit. When loaded all it shows is a blank screen. DON'T PANIC. PRESS START. After you lose, PRESS START to begin a new game. It uses a joystick in port 1.

DDENSITY.BAS

I wrote this program out of desperation after several incidents where I ran off copies of library software only to discover later that they would not run on an ATARI 810 disk drive because they were formatted for 1040 sectors by an ATARI 1050. The program will read select D1: and attempt to read SECTOR 360, which should

be on any format disk. It then reads SECTOR 1020 which will be found only on 1050 ENHANCED DENSITY disks.

BGM.DOC/BGM.TXT

SPACE member Mark Vallewan wrote this BACKGAMMON simulation in the 'C' language using the LIGHTSPEED C development package. He also used the VITA-MIN C compiler and TEXTPRO text editor from the SPACE library.

BLAST.COM**TRACER.COM****TROLL.COM**

Three machine language arcade-style games. All three require a joystick. Have fun.

KARATE**MOON****MAIN.PIC****KARATE.ARS**

Written in BASIC, this arcade-style game pits your champ in white against an opponent in black. You use the joystick to make your man move, punch, kick and leap. It's not to bad but the black fighter always seems to get the upper hand. If you put all 4 files on a DOS2.0/2.5 disk and rename KARATE.ARS to AUTORUN.SYS the game will run automatically after boot.

SIDE B:

DOS SYS 037**AUTORUN SYS 007****GAUNTLETCOM 236**

AMAZMAZECOM 055
PARALLAXCOM 087
FROGGIE COM 040
DOGRACE COM 169
TROLL COM 023

Boot this side with DOS2.0/2.5 and the *.COM menu will load and allow easy loading of all the games. All but the DOGRACE.COM require the use of a joystick.

TEXTPRO DOCS

This is an improved documentation file for TEXTPRO. The original docs were fragmented and unclear. This set is much clearer and better organized.

MYDOS rev. 4.50

The latest and greatest release for all you MYDOS lovers out there. If you don't know about MYDOS, it is compatible with DOS 2.0 and allows for configuration of RAMDISKS, hard drives and the ATR8000.

PRINTSHOP HANDBOOK

This is a group of PRINTSHOP icons collected from the book PRINTSHOP HANDBOOK. Also on this disk you will find the PRINTSHOP utilities SHOPTOOL.COM and PSU.COM. These programs will allow you to copy, delete, rename and display PRINTSHOP files and also convert between PRINTSHOP format and DOS format.

MAIL requests for SPACE LIBRARY disks may be sent to the following address:

Joe Danko
2766 Chisholm Ave. North
North St.Paul, MN 55109

All mail orders are \$6 each or two for \$10

**STARTUP**

by John Novotny

I proceed in the DOS 2.5 with RAMdisk environment somewhat envious of the SpartaDOS crowd, but so far not enough to make the switch. Maybe for one, I still don't know enough about SpartaDOS to convince me that I need it (Is this an invite for someone to give a demo at an upcoming SPACE meeting?!). And maybe I don't have enough applications to justify it. The other side of this issue is that the DOS 2.5 environment isn't all that bad, and once you use something for a while, the predictability of operation becomes an important factor also.

Nonetheless, one feature that I have been envying is the ability to execute a batch run-stream to initialize things for a particular application. This would include setting up a second RAMdisk (on a 256K machine), and loading up programs and data

files into RAMdisks. This is quite readily done using SpartaDOS I assume, but using DOS 2.5 needs a different approach. One important factor is getting it done in a timely manner, since what you stand to gain from this type of effort is saving time. One approach was to have a .COM utility and a .BAT file to do the job.

After coding several of the functions, I found myself wishing for the simplicity of making changes provided by BASIC. Soon I was experimenting with the XIO command to format a RAMdisk (it works!) and setting up copy routines (using CIO calls), and finding that performance (i.e. speed) was comparable to an all ML program. Besides, using BASIC, I could readily put the .BAT file entries into DATA statements.

Getting back to the XIO command, one of the really neat things is that the XIO statement as documented in 1982 ("Your ATARI Computer" by Lon Poole) works so nicely with the DOS 2.5 RAMdisks. This is a tribute to the original scheme of the CIO interface and the implementation of the RAMdisks. It gives one a warm feeling to be able to access hardware disks and RAMdisks using the same software.

Other XIO functions (besides format) work equally well with RAMdisks. These include deleting, locking and unlocking

files. These are all handy functions to help in implementing a startup program, and one that modifies an application to advance through varying development processes.

Although what I have done so far in this area hasn't become a real product, I have demonstrated that BASIC is very acceptable for this task. It will format a RAMdisk and load four files totaling 150 sectors in approximately half a minute. (These are single density sectors from stock 1050 drives). The program size is under 10 sectors, so loading and initializing it are also fast. Come to the January SPACE meeting to share ideas about startup programs.



M • A • S • T

News from the Pres

By Jim Schulz

It's January and time to start out on a new year!

It has come to my attention that there are several stores handling Atari ST stuff in town. In addition to Wizard's Works, we now have Electronic Boutique in Maplewood Mall, Computer Fitness in LittleCanada, The Computer Station in South Minneapolis, Budget Computers at four locations around town, and also some new repair shop someplace in St. Paul.

But even with these new/old locations, please don't forget

Wizard's Works either. Remember Wizard's Works offers MAST members a 25% discount with a membership card or a recent mailed newsletter. Support your local Atari dealer!

I just received a letter from a new Atari group in Fargo/Moorhead area. This is now the second Atari group outside of the Twin Cities. The other group is in Duluth. This group seems to be big into midi and is helped by a music store which also sells computers. The Duluth area also has a rather active Atari group. We have a sort of close Atari group also in Thunder Bay, Canada as well. Over the next few months, MAST and SPACE will be talking to these groups and seeing if there isn't more that can be done to help Atari thrive in all areas.

Last month, we held our biannual MidiMaze tournament. I would like to thank Dave for all of his support and the members for a zapping good time..... The winner this time was Kurt Schumacher, and he won a copy of Arkanoid II. I would like to thank everyone who brought their computers, played and watched.

This month, we are going to have yet another MAST Swap Meet. This is the time right after Christmas to go through your closet and look for pieces of ST hardware and software. Please note: only software with the original disks and documentation is to sold or swapped.

In addition to the swap meet, we will have our normal meeting. This month, we will be demoing Typhoon Thompson, Tetra Quest, Karateka, and Bubble Bobble. Helping us again this month with demos will be Steve Murphy.

Don't forget this month's MAST+ meeting the following **TUESDAY** [ed. Regular meeting is on Monday, but gets moved during months were that is the 4th Monday of the month, as another group uses the meeting place] night. This month, we will have our normal group of contributors as well as a demo by Todd of his new yet-to-be-named editor in its completed form, and Steve Murphy will be showing off his modern Stratego game. If you have a question about programming the ST, this is the place to get your question answered. For programming talk as well as pizza after the meeting, come to the next MAST+ meeting.

BBS..... Steve has started posting a monthly report of the BBS activity in the bulletins section. Check this to see when the best time is to call and which public domain programs are hot downloads. Starting this month, we will be having a separate download section for Online Magazines. In this section, we will have the weekly ST Reports, the new weekly ZMAG ST newsletter, the twice monthly ST Profile newsletters, and the new ST Views

newsletter as well. More ST news is coming in the months to come, once this section is settled. I call in at least once a day so this is one of the best ways to get ahold of me. So call the MAST BBS at 560-9254 and give it a try yourself.

Tidbit time.... First, MAST is again looking for another volunteer. This volunteer will be needed in April or May. All you will need to do is stick labels on postcards and mail them out once a month. MAST will provide the postage, labels, and postcards. This is a very easy job, but it needs to be done reliably each month. The long lead time in asking is to find a volunteer and to get everything figured out before passing this new job out. If you are willing to volunteer and help MAST, please let me know on the MAST BBS or at the MAST meeting.

How about volunteering programs??? This is a call to all of the programmer in MAST. One of the commercial BBSs which I use gives extra free download time for uploads. I am willing to upload MAST member programs to the commercial BBSs for the free time. But I need programs, clip art, etc. from you the members to do this. I uploaded Steve's Amazing program and got 40 minutes of free download time. Now you the programmer can help MAST as well. A couple of notes.... If you could, please mention MAST, the MAST

BBS with the phone number, and/or STdNET somewhere in your program or documentation.

If you are willing to help MAST in this way, please upload your programs to the MAST BBS and leave me a message or bring them to the MAST meeting.

A new ST book has just been published which is worth a look. The book is called The Atari ST Book —Tips, Instructions, Secrets and Hints for the 520, 1040 and Mega STs by Ralph Turner. This is an excellent book for the beginner ST owner as well as offering something for the more experienced ST owner as well. I will be purchasing a copy for the MAST book library as well as having my copy at the meeting. The book sells for \$16.95.

Well, that's about it for this month. But before we go, let's see what the envelope has to say??? First, the envelope loves this game called Pacmania, a 3D version of Pacman with super large boards and a jumping Pacman as well. Also, look for Bubble Bobble, this was a very popular game in Europe which is now available in the US. Finally, check out this new ST book. There is finally a book which explains ramdisks, the item selector, desk accessories, the desktop, the AUTO folder and more... What the envelope talks???? Ooops, as it closes its flap for another month. I wish all of you a Happy 1989.



MAST Disks of the Month By Jim Schulz

Last month's selections:

- #326 - NetHack V2.3 (Character graphics dungeon game)
- #334 - Analog Disk #20 (Files and programs from ST-Log #25)
- #335 - December DOM #1 (Utilities)
- #336 - December DOM #2 (Applications)
- #337 - December DOM #3 (Games)
- #338 - December DOM #4 (More Games)
- #339 - Demo Disk #33 (Calamus Spreadsheet Program Demo)
- #340 - ST Vegas Game (Combination of four Las Vegas games)
- #341 - DDST Dungeon Game (Ultima-like dungeon adventure game)
- #342 - AVS Raisin Demo (Watch and listen to the singing raisins)
- #343 - Christmas Disk (Demo and game with Santa and the elves)
- #344 - Analog Disk #21 (Files and programs from ST-Log #26)

Before I go on, I didn't demo DDST at the meeting and I should have. I run so many program that I got it mixed up with another program. After the meeting, Dave Meile, our trusty VP and newsletter editor, and I played it for a while and it is more like the Ultima series than the Hacks and Lams. We will demo this at the next meeting. If you like D&D-type

games, this is a must to pick up.

Doc disk - This month, we will have an update to the current DOC disk. I am also working on the new README disk (or disks)

Prices - All MAST DOMs are \$6.00 each. In addition, the MAST news disk, the ST News disk and the doc disk are \$2.00. Updates on old disks are \$2.00 with the return of the original disk.

Backorders - If you are waiting for a disk or have paid for a disk, please let me know and I will take care of you ASAP.

A note of thanks is in order for MAST member Bill LeDuc. Bill has helped me over the last few months get a new hard drive added to my system to allow me better make the DOMs and serve the club. For the first time in two years, I actually have free space. I have also had the chance to test about 75% of the stuff which I have downloaded because of space. Expect some better and different disks in the months to come. Thanks again Bill for your help.

Lately, you have said that you want a better DOC disk. You also wanted GDOS font disks and clip art disks. You also wanted a better arrangement for the ANALOG disks. You also wanted documentation for the ANALOG disks. I am working on these and other suggestions - expect to see some changes in the coming months.

I am toying with the idea of general suggestion box for DOMs, questions, and ideas in general. What do you think???

Update Disks - We have two updates in the offing. A new version of the Sheet program is to be released any day now with more features. I also have a Sheet template for the 1989 taxes so this will either go on the new Sheet disk or this month's application disk. Also a new ST Xformer transfer utility has been released as well as a preview of the next version which will be out next month with 130XE and 328XE emulation, virtual hard drives, ramdisks and a whole lot more. If there is enough, I will put together a new disk. Bring your disk along or check the MAST BBS before the meeting for final confirmation.

Utilities - We have a couple of new or improved utilities this month.

The first is probably the most significant. The author of ST Xformer has released a text blitter desk accessory/AUTO program. This program works just like Turbo ST and gives you the performance of the blitter without the blitter. Also, we have a new version of the ARCSHELL program. This version adds NeoDesk compatibility and an option to delete an ARC file when done. We also have a text viewer/search program with the PASCAL source code as well.

Applications - Here, we have a demo version of an IMG

editor program. This program will allow you to view any IMG file. You have been asking for it so now here it is. We also have a new version of the desk accessory address book program which allow you to keep address of all your friends as well as print address labels as well.

Games - This month, we have one of the best color games that I have seen. This game is called Space Baller and the object of the game is bounce a ball from one end to the other, but there are some obstacles as well in the way. We also have an ST version of Xevious. I believe that this game has been on the DOM in the past, but one problem with it was that it was just too difficult to play. So enter Devious... What??

Someone has written a cheat program with three options, one starts you with more ships and gives you more faster, one option gives you an infinite amount of ships, but your ships blow up and the final option lets you never die or blow up.

Specials - We have a number of specials currently slated for this month.

The first is a Magazine Review Data Base. Someone has been keeping a database of all of the major ST magazines and reviews. This disk will include the magazine database and a database program for reviewing the data and printing it. This is a great way to find those old articles in your magazine collection.

The next disk is a demo of the new Lotus compatible spreadsheet, LDW Power. After running this demo, I knew this was something worth looking into. This demo initially runs a demo to show itself off. Once this is done, everything works except for store and print. So bring home your Lotus spreadsheet and check this one out. A great try before you buy opportunity.

Next up is a digitized music disk. This is another full disk of digitized music from Europe. This one is called Matt's Mood. This requires a listen to really appreciate it!!!!

ANALOG - As stated earlier, expect a number of changes in the ANALOG disks starting next month. This month's disks looks very good. Programs this month include Transwarp, a program to double the speed of your floppies by David Small and Dan Moore, a 3-D Life game by Tom Hudson, and an adventure-type game called Drama-cide.

Check out the MAST BBS the week of the meeting of the latest update on this month's DOMs.

If you can't make the meeting and would still like to get ahold of the DOM or would like to get ahold of the DOC disk, my new address is

5900 65th Avenue North #204
Brooklyn Park, MN 55429

That's it for January.



Hard Driving in the Cheap Lane by Kent Schumacher

When I first bought my 20 Mb Supra hard-drive, I never thought I would run out of space. Within six-months the drive was full. Strict rationing of disc space kept me going for another two years. (Strict rationing means that I only kept forty-seven accessories, 145 utilities, four compilers, two assemblers, seven applications, and of course sources, net-mail, WP documents, spreadsheets, and data-bases - no pictures or drawing applications). Then came the alternate OS's - I bought PC Ditto, and I would like to get Spectre 128 and Minix. It was obvious I needed more hard-drive space.

That conclusion made, I began looking for methods of expansion. Luckily Bill LeDuc had added a second hard drive to his system several months previous and had lots of suggestions on what to do. After some discussion, we decided to go to the fall Ham-Fest to look for some hard-drive deals (Actually I tagged along with Jim Schulz and Bill LeDuc).

At the Ham-Fest Jim Schulz and I each bought a Quantum Q540 35 Mb 33ms auto-park drive for \$210.00 apiece. While wandering around I ran into

a fellow who claimed he had a SCSI to ST506 controller board for sale. I bought this for \$40.00 and an additional damaged controller board (for backup parts) for \$20.00. Connecting cables ran an additional \$8.00.

On arriving home I pulled apart my Supra 20Mb, hooked up the Supra's power supply to the controller (which turned out to be an Omti 20C) and the Q540, connected all the cables (as specified in Supra's documentation), and powered up. I could hear the drive spin up, so I connected the drive to my ST and attempted to format it. Supra's utilities could not find any valid SCSI devices. After thinking a bit, and messing with things for a while, I discovered that the Supra power supply voltage was running at somewhat less than 12V. After some more messing around I determined that the Q540 drive required too much power for the rather wimpy Supra power supply.

Luckily I was able to get a good power supply fairly quickly (actually I got two - I bought one which I intend to resell to a friend, and I bought a case from Bill LeDuc which I used to house my add on hard-drive). This time on attempting to format, the Supra HD utilities recognized the SCSI device, but got errors before starting to format. I got on the phone and called Omti, who gave me a dictated list of jumper settings and promised to send me

out the controller manual ASAP - they also gave me the wonderful news that they did not have any info on my revision 6 board - all the info they had was for a revision 1 board.

When I went to set the jumpers, I found that Omti had given me settings for four jumpers - my board had seven. Worse yet, the positioning and pin numbering of the jumpers I did have were not quite in sync with what I had on the board. I set the jumpers that looked close, left the rest of the jumpers the way they were, and attempted formatting - errors again. At this point, I felt that the only way to get this to work was a brute force approach, so I laid out a chart which would give me all combinations of the three unknown jumpers (each of which had three possible settings). I ran through the first series with nothing but errors, changed one of the "known" jumpers, and made it halfway through the second series before I got a reaction from the drive. I could hear it format, but the Supra formatter would get errors when it attempted to clear the directories. One of the "known" jumpers was a sector size selector (512/128 byte sectors), so I took a stab in the dark and changed it's setting - this time the formatter made it all the way through with no errors. After dancing around my house and trying to explain what had happened to my neighbors, I went back inside and ran a sector checker. All of the sectors after sector number 10,404 were bad - it

appeared I had a 5 Mb drive on my hands.

Over the next week, I varied every setting on the Supra formatter, and tried all the remainder of the jumper settings, in all their seemingly endless combinations. Nothing I did would get me past the magical 10,404 sector mark. That weekend I ended up at Bill LeDuc's house, where we hooked up my Q540 to his Adaptec controller. The drive formatted perfectly to 35Mb with only one bad sector (69,631 good sectors). We also ran Bill's HdCheck program and found that the Q540 was a very high performance drive - average transfer rate of 450Kb/Sec (in comparison, the current 3-1/2" 20 Mb Supra drives have an ATR of 215Kb/Sec, and the 5-1/4" 20 Mb Supra drives have an ATR of 350Kb/Sec). All of this fun told me that the problem was with the controller, not the drive (which was a relief - \$60.00 vs. \$210.00).

The next day the Omti 20C manual arrived (revision 1, of course). A little research uncovered three facts. 1) The default parameters for the Omti 20C are 4 heads, 153 cylinders, and 17 sectors/track ($4 \times 153 \times 17 = 10,404$), 2) the change parameter command number for the Omti 20C was \$C2, and 3) the Atari DMA/Disc controller chip cannot pass command numbers greater than \$31 to the controller due to the method Atari uses to select the controller (this shouldn't

ever be a problem with SCSI drives - it turns out that the Omti 20c is a SASI controller). Needless to say I was amazingly frustrated - luckily I ended up explaining things to my neighbors again before I seriously started to punt things.

After calming down I decided that a little more work on top of all that I had already done wouldn't make much difference, so I very thoroughly read the controller manual. I turned up a couple quirks in the Omti controller that I thought I might be able to take advantage of. After about 30 hours of experimentation and programming over the space of six weeks, I finally managed to set the parameters. Another couple of hours and I managed to clear the directories and create a valid TOS root sector on the drive, and I had a fully functional 35Mb drive (for only \$278.00 and 50+ hours of my time).

In closing I would like to make a few suggestions for any body looking for a budget hard drive:

- Don't impulsively buy things - before you start shopping around, get a list of SCSI to ST506 controllers and hard drive mechanisms that have been used with the ST. If you do this, the odds are pretty good that the drive will run fine the first time you get it connected. (Bill LeDuc can attest to this).

- Be sure you have someone you can turn to for advice if things go wrong. If I hadn't had Bill to bounce ideas off and to get advice and moral support from, I would have never have gotten my drive to work.

- Be sure you buy your drive and controller from someone who will be willing to refund your money if things don't work. The Quantum Q540 Jim Schulz bought was bad. It had to be returned, and luckily Jim got a refund.

- Finally, be prepared to spend a little time in working with the drive if things don't work right off the bat. Don't be afraid to call the manufacturer of the drive or the controller - they are generally very helpful.

Your help is needed!!!!

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SPACE - 8Bit Group The SPACE meetings are devoted primarily to the 8-bit ATARI computers such as the 400, 800, 600XL, 800XL, 65XE and 130XE. There is other ATARI related news and some 16-bit news at the SPACE meetings, as well. The SPACE group meets on the second Friday of each month at the Falcon Heights Community Center, 2077 West Larpenteur Avenue, at 7:30pm. Doors open at about 7:10pm.

MAST - ST Group The MAST meetings are devoted primarily towards the ATARI 520ST, 1040ST & MEGA computers. There will be ATARI related news items covered, but not 8-bit news. The MAST group meets on the third Friday of each month at the Falcon Heights Community Center, 2077 West Larpenteur Avenue, at 7:30pm. Doors open at about 7:10pm.

MAST+ - Programming Language User Sig MAST also has a programmer's group meeting. This group has a more technical discussion regarding programming the ST computers in a variety of languages. The group meets on the Monday following the MAST meeting at the First Minnesota bank on Lexington Avenue near Larpenteur Avenue. Meeting time is 7:30, with doors opening at about 7:20pm. The entrance is in the back of the building and leads to a stairway to the second floor.

For more information, or to confirm a meeting time and location, call Greg Howell (SPACE) 636-0381 or Jim Schulz (MAST) 533-4193

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